

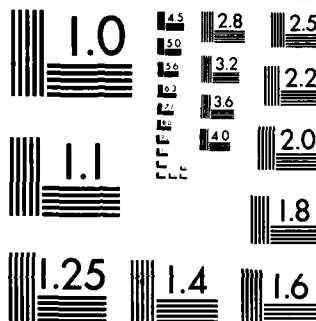
INVESTIGATIONS OF MICRO-TURBULENCE IN THE BOTTOM OF THE
BOUNDARY LAYER(U) SCHMITT (RAINER) GLASHUTTEN (GERMANY
F R) R SCHMITT MAR 85 DAJA45-83-C-0038

BOUNDARY LATER (U) SCHMITT (KATNER) GENS
F R) R SCHMITT MAR 85 DAJA45-83-C-0038

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

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Investigations of Micro-Turbulence
in the Bottom of the Boundary Layer

Third Interim Report

Dr. Rainer Schmitt

March 1985

United States Army

London England

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RD 4302-R-EN

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CONTRACT NUMBER : DAJA 45-83-C-0038

Dr. Rainer Schmitt

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→ This third interim report deals with
the second series of measurements in
Western Germany.

Data are presented for the period
Jan. 1985 to March 1985: location
STEINBACH (West Germany, for Region 12:

Data are presented for the period
Turbulent boundary layer measurements
Preliminary data indicating
the results

→

C O N T E N T S

1. Technical Problems
2. New data transmission system
3. List of measurements: STEINBACH
List of Measurement: BREMEN
4. Presentation of Data: STEINBACH JAN 1985 to March 1985

2. Technical problems.

Some major technical problems occurred using the "old system". The EXAR 2207 frequency generator and some subsequent electronic parts were broken. These parts have been replaced but there with this set of instruments still problems exist. The "new" system is installed at BREMEN and is not available for test. We think, that the LOCKHEED-handbook of the instruments is not sufficient for repair, because no examples of test-signal are documented, descriptions are very poor. We still have to work with one system trying to repair the second.

The weather-conditions in Germany and the fact, that instrument-signals are not correct under rain and fog, generates a lot of logistic problems performing measurements at two sites 500 km apart. A number of days are wasted waiting for atmospheric conditions suitable for measurements.

2. To overcome these problems we have installed a data-transmission system using acoustic couplers and the telephone-line. Data are now transmitted by telephone at the end of a 17-hours measuring period. This system is in operation at location STEINBACH. In BREMEN we changed the system, using a HP 71B-computer with memory for 46 hours. The computer has to be sent to our office for data evaluation.

At both locations data are collected every 20 seconds and stored as original-single-values.

At the BREMEN-"new"-system we control the optical alignment and the fog/rain occurrence using the signal of the control-LED to mark the Cn2-volt signal.

3. List of measurements

STEINBACH:

1/2/3/4/5 Sept. 1984
8/9/10/11/12 Oct. 1984
4 ... 19 Dec. 1985
2..8, 10...23 Feb 1985
1..4, 14,15 April 1985

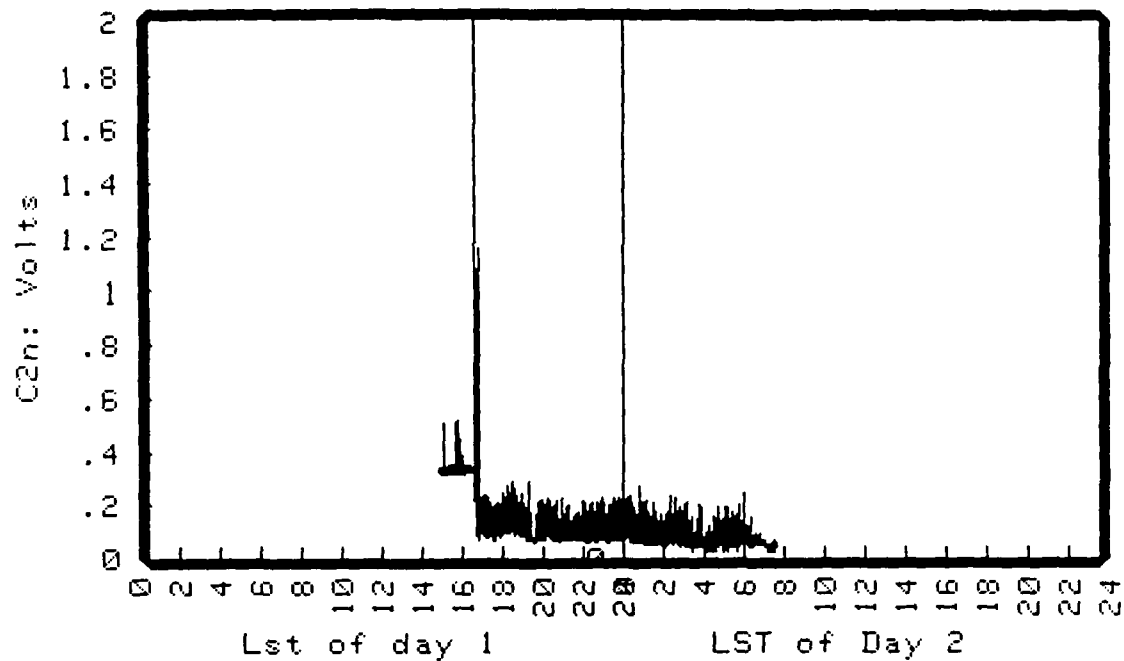
BREMEN

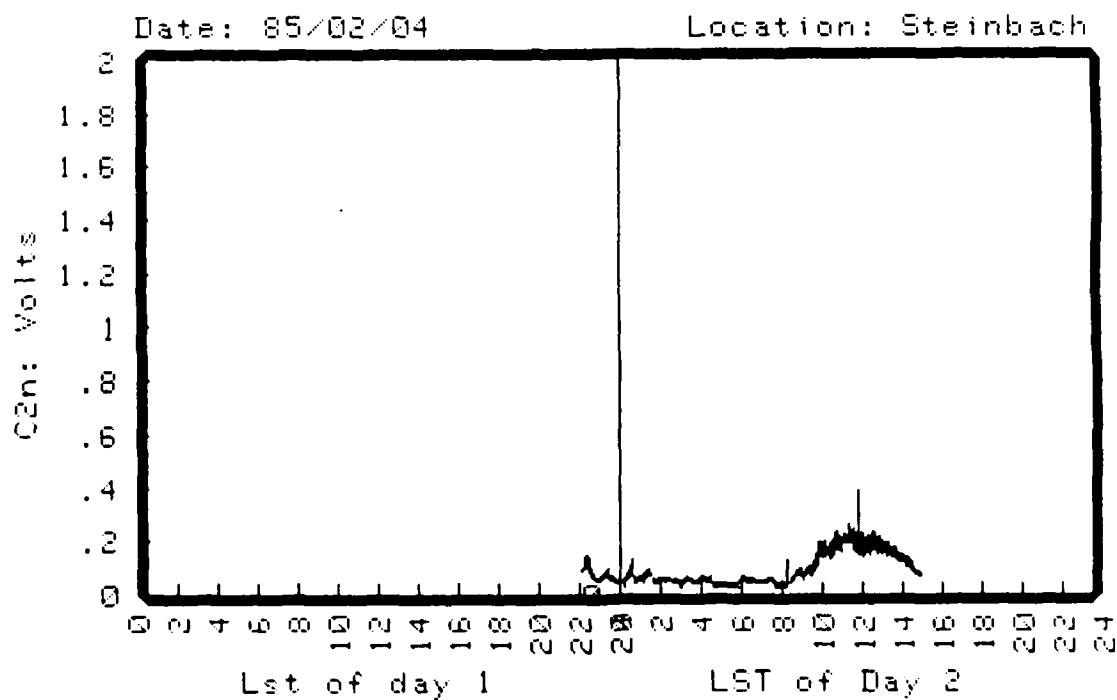
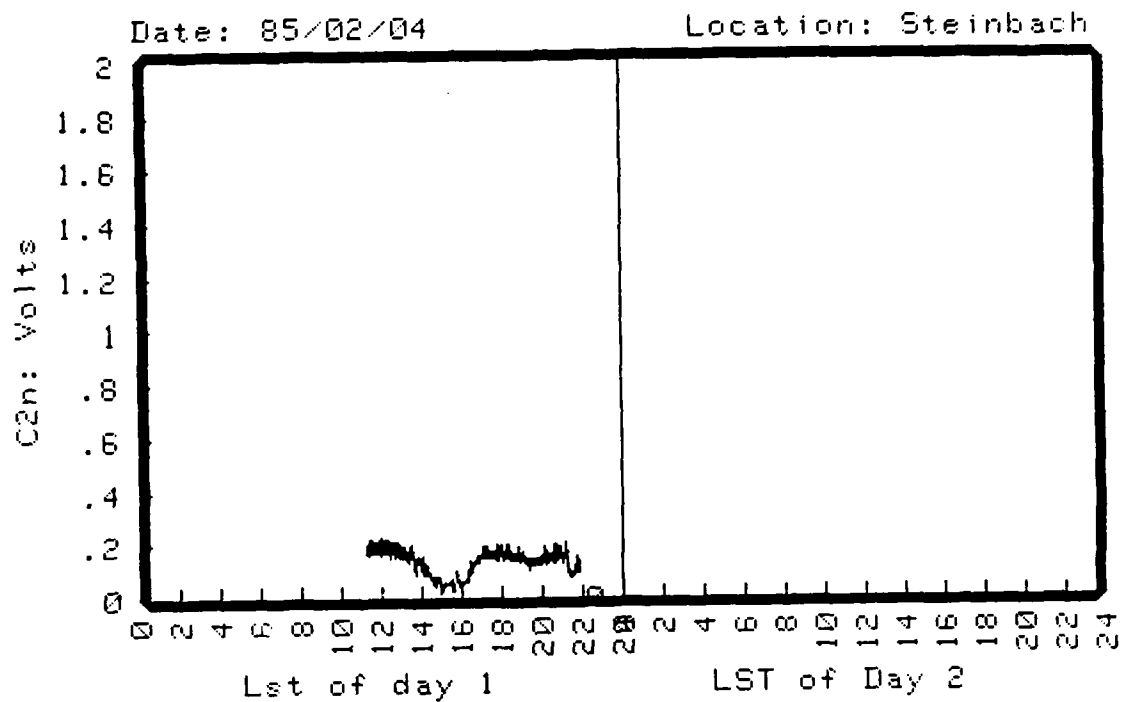
4, 15 March 1985
19, 20 April 1985

At both sites measurements will continue until Dec. 1985 in the following time-schedule if possible:
STEINBACH ca. 10 days per month
BREMEN ca. 8 days per month

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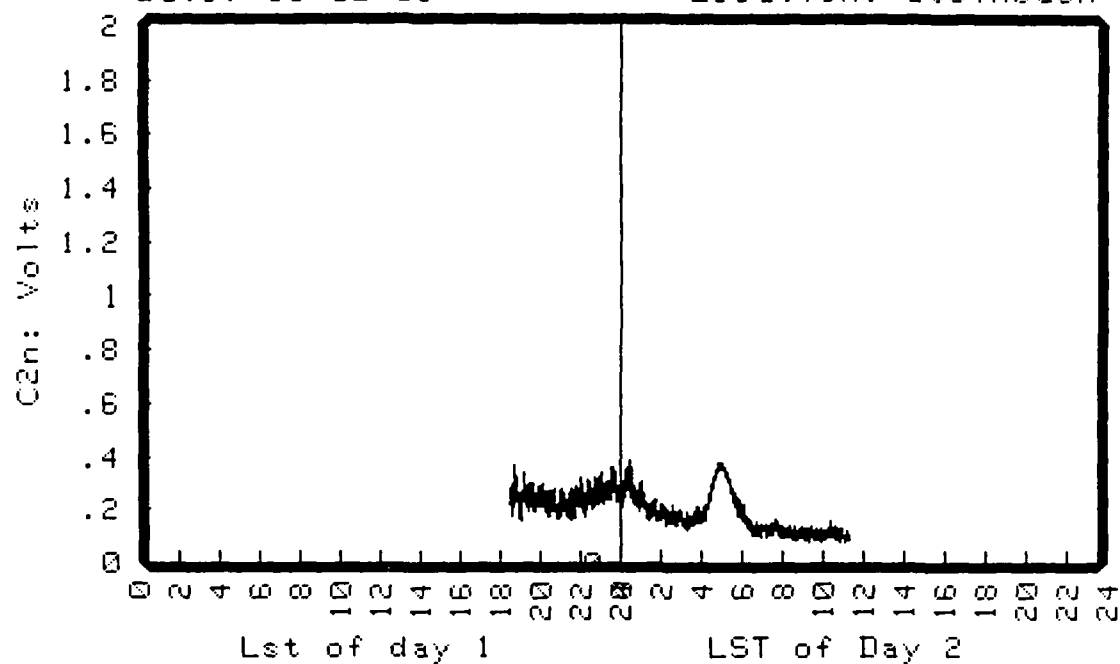
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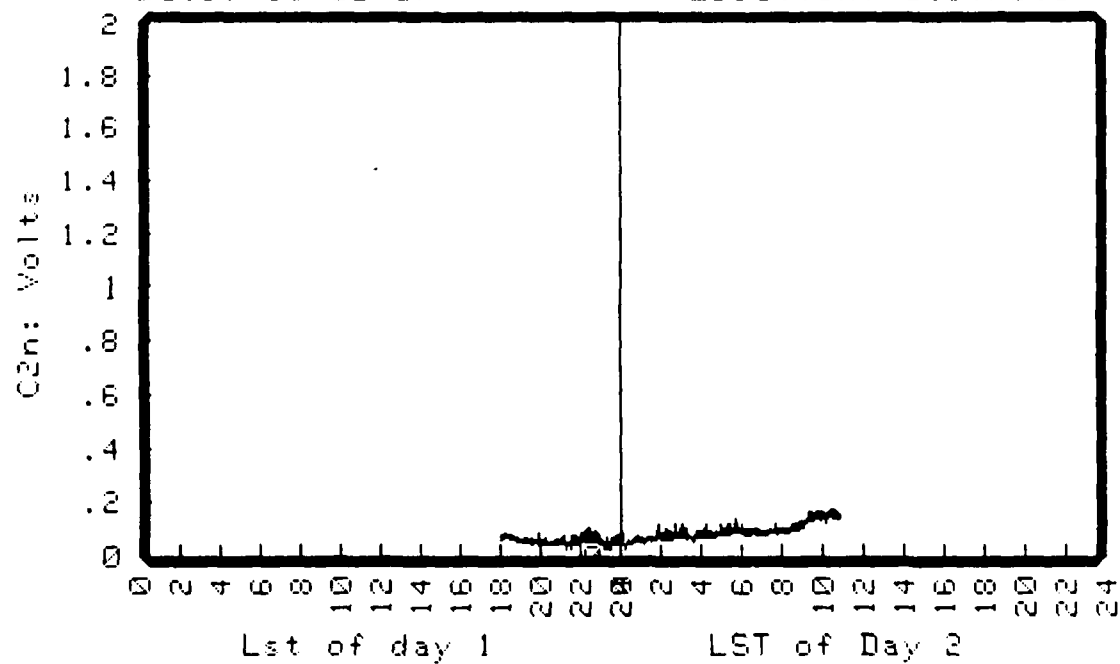
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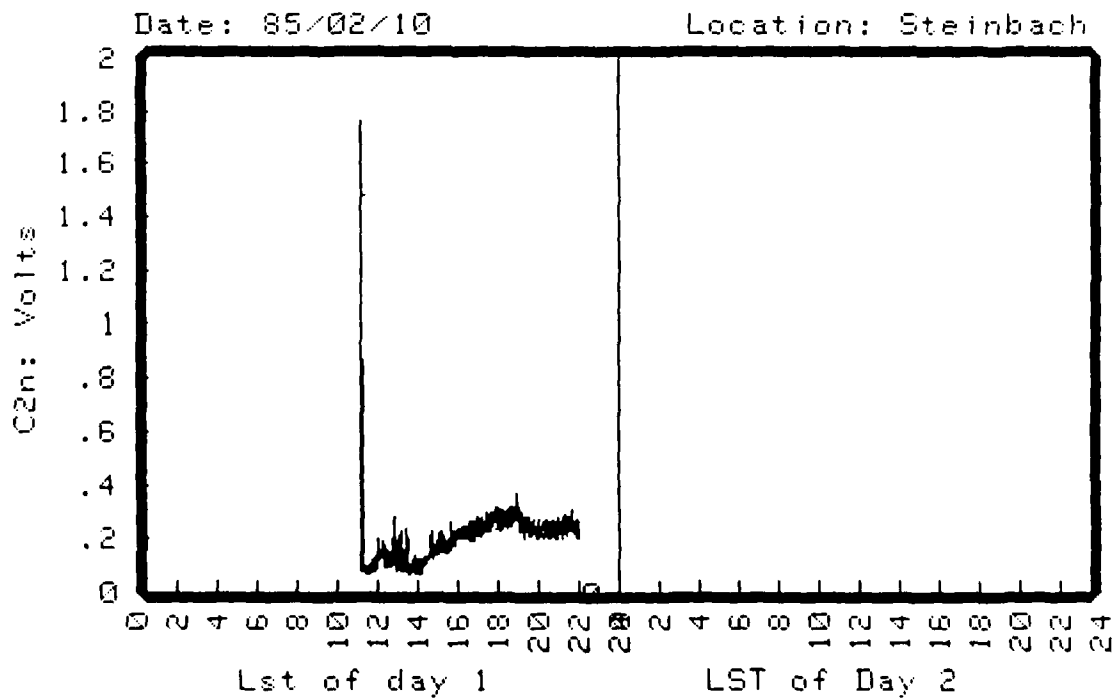
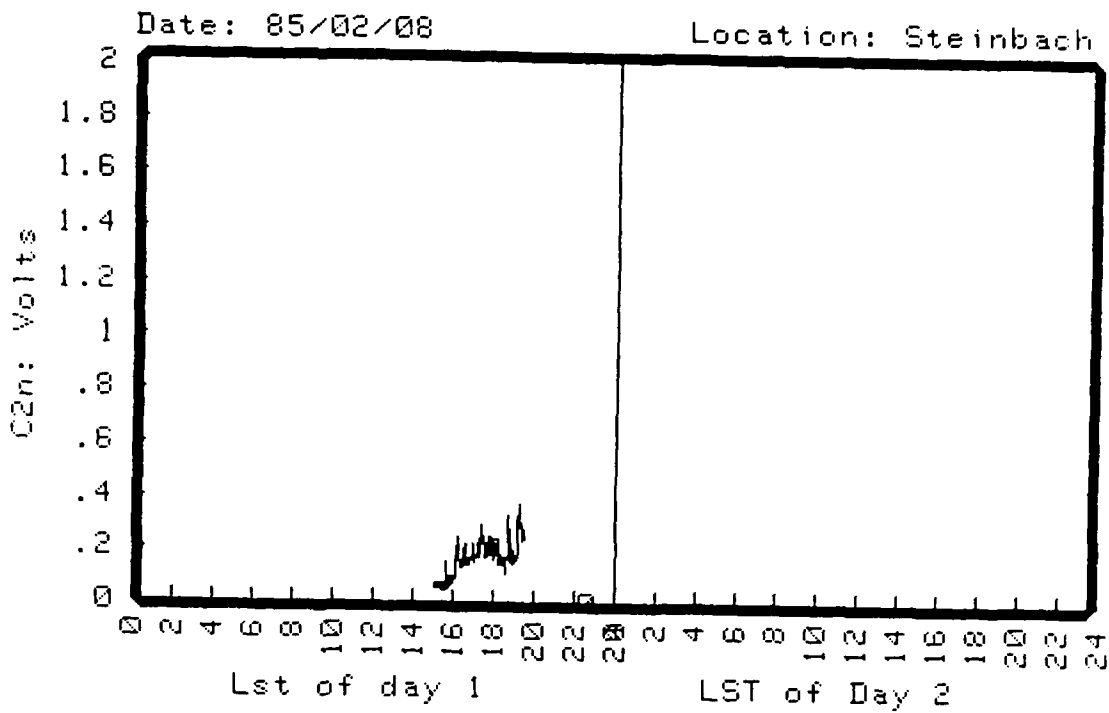
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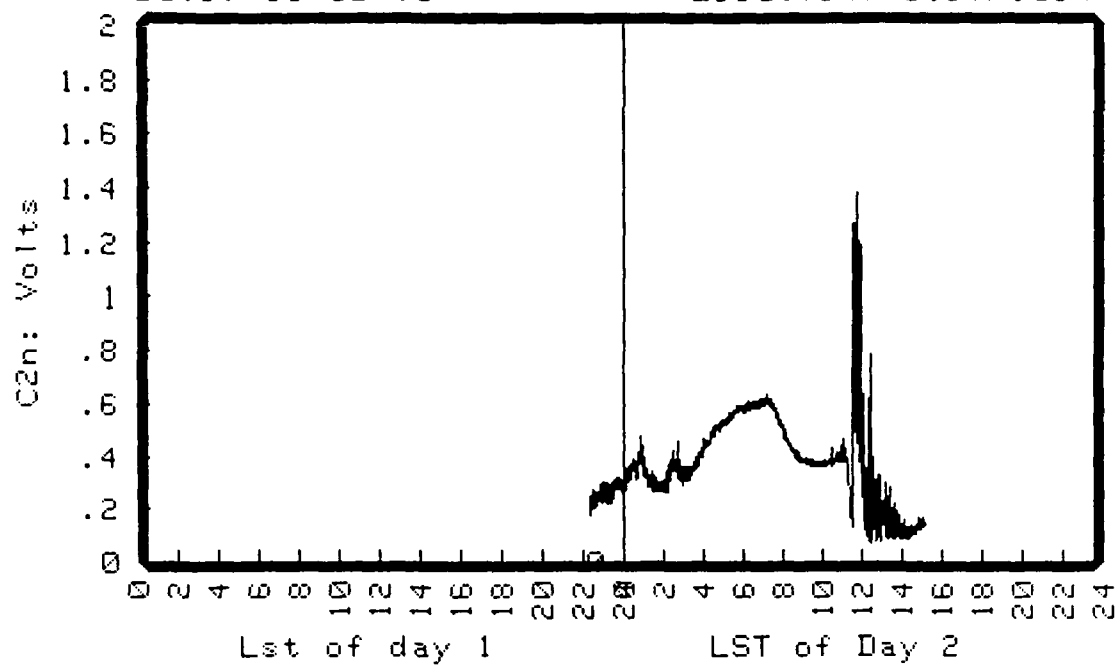
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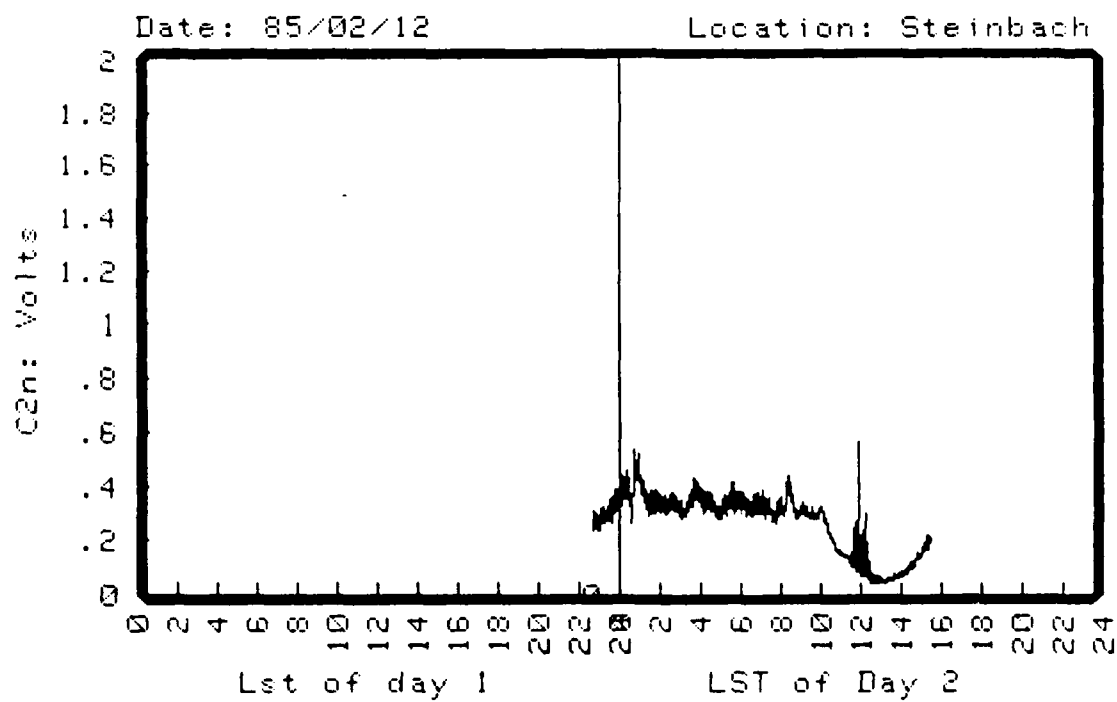
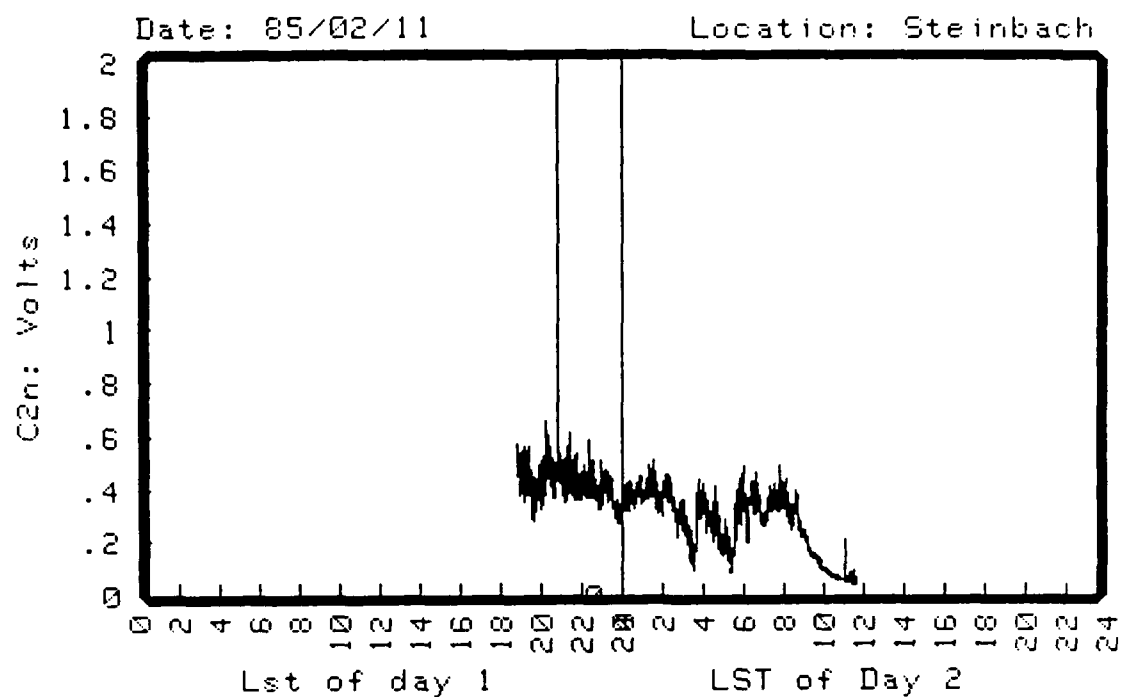


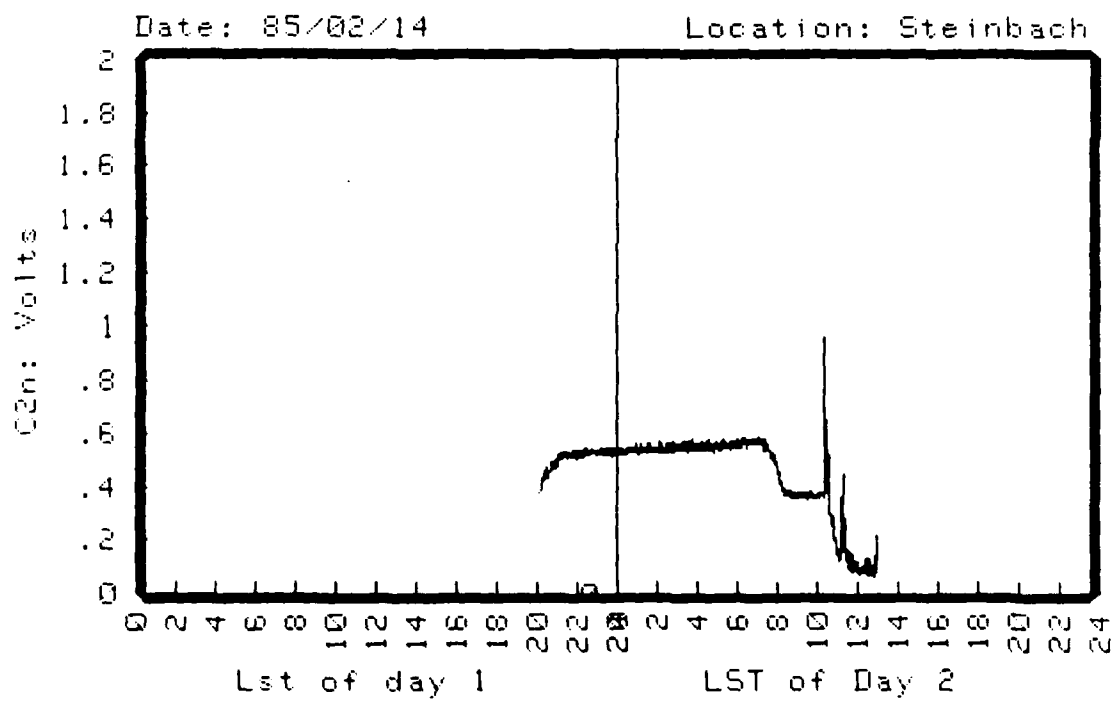
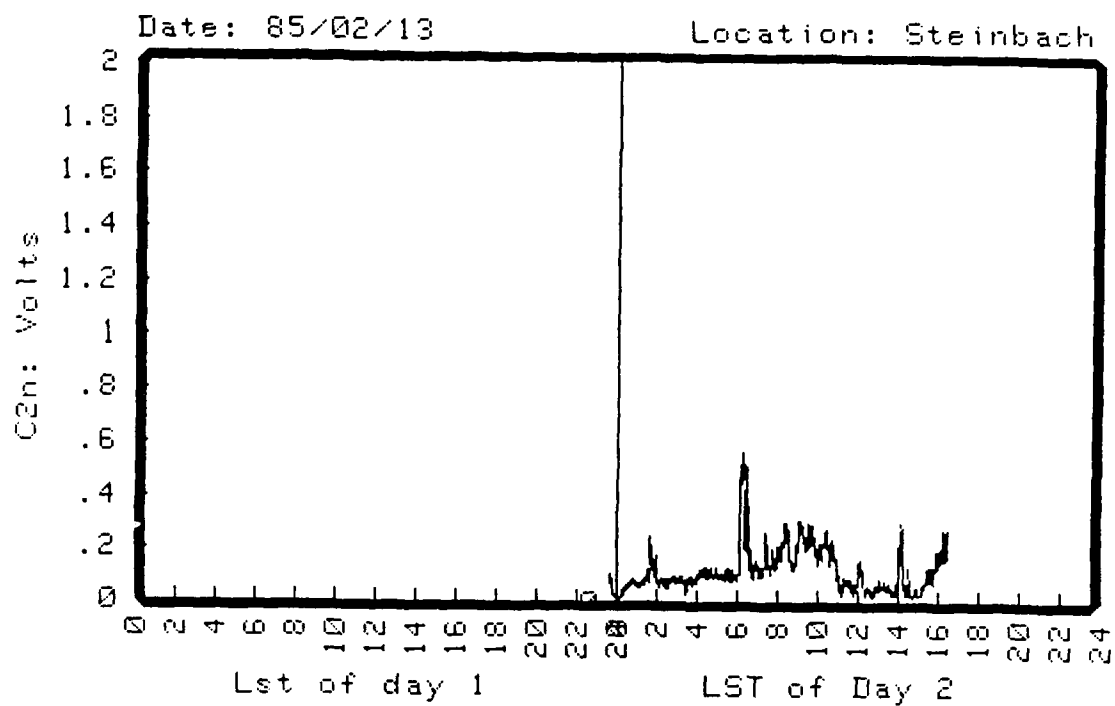


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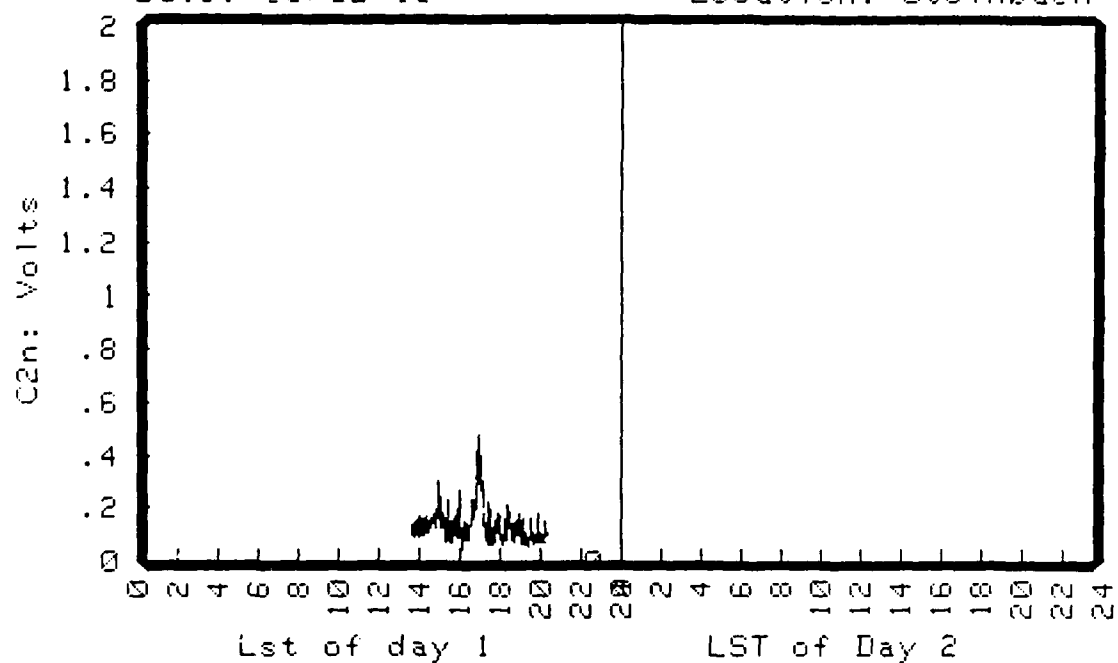






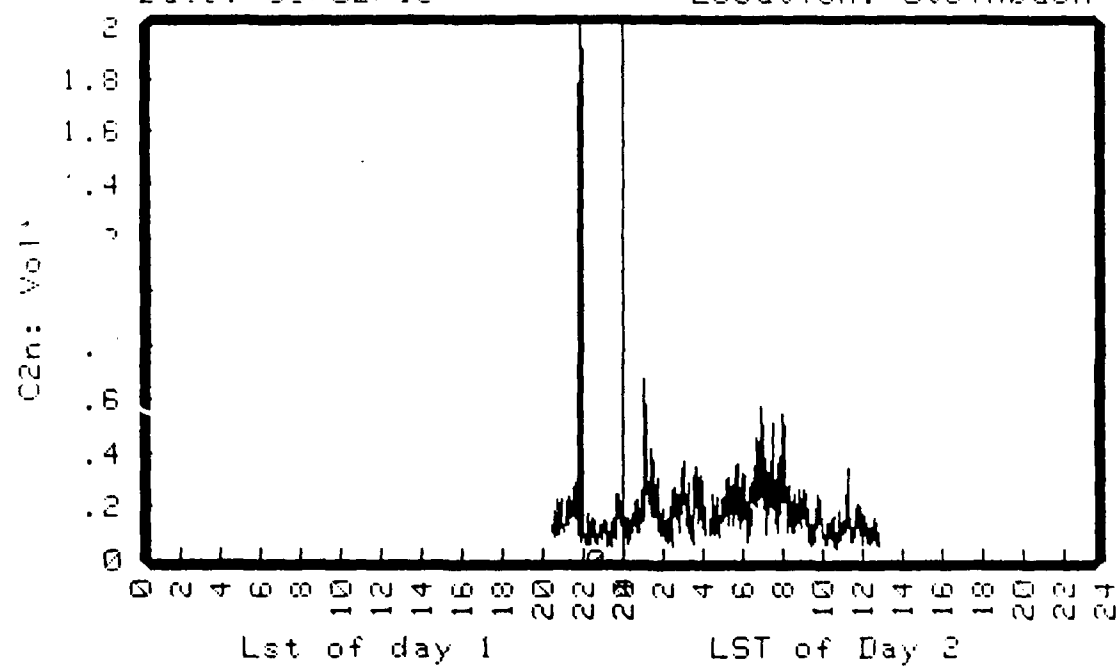
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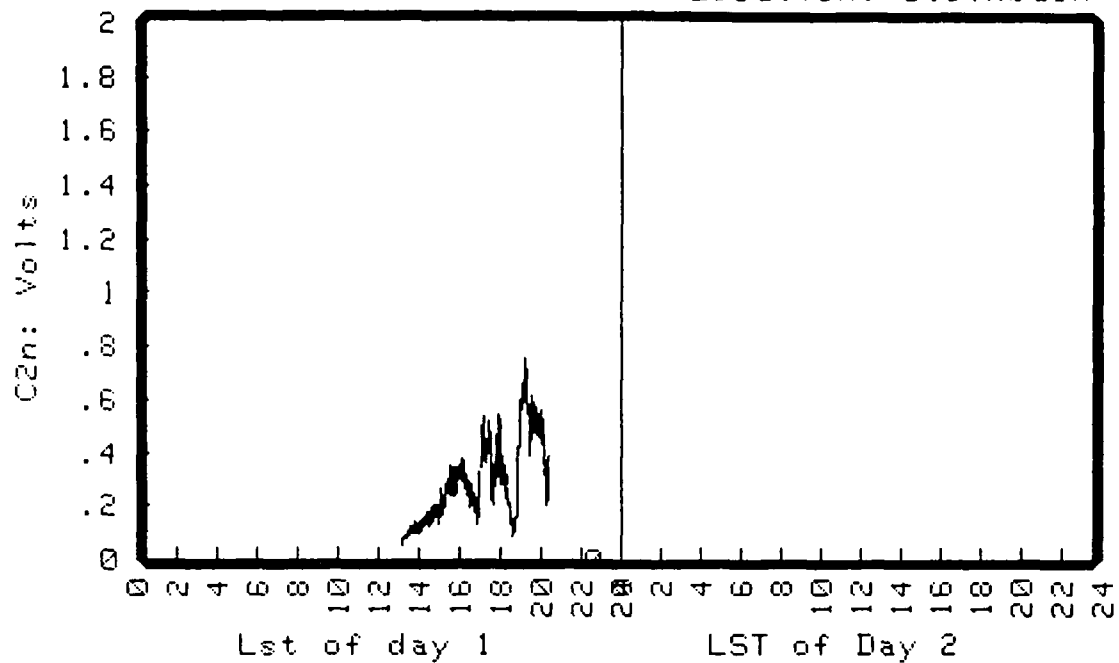
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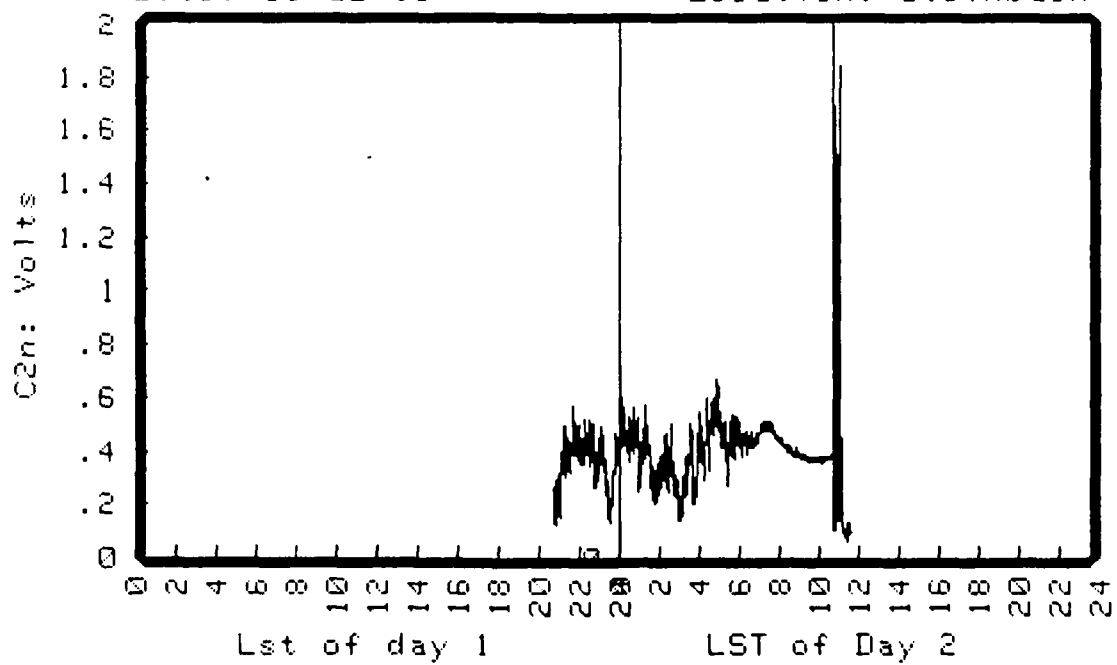
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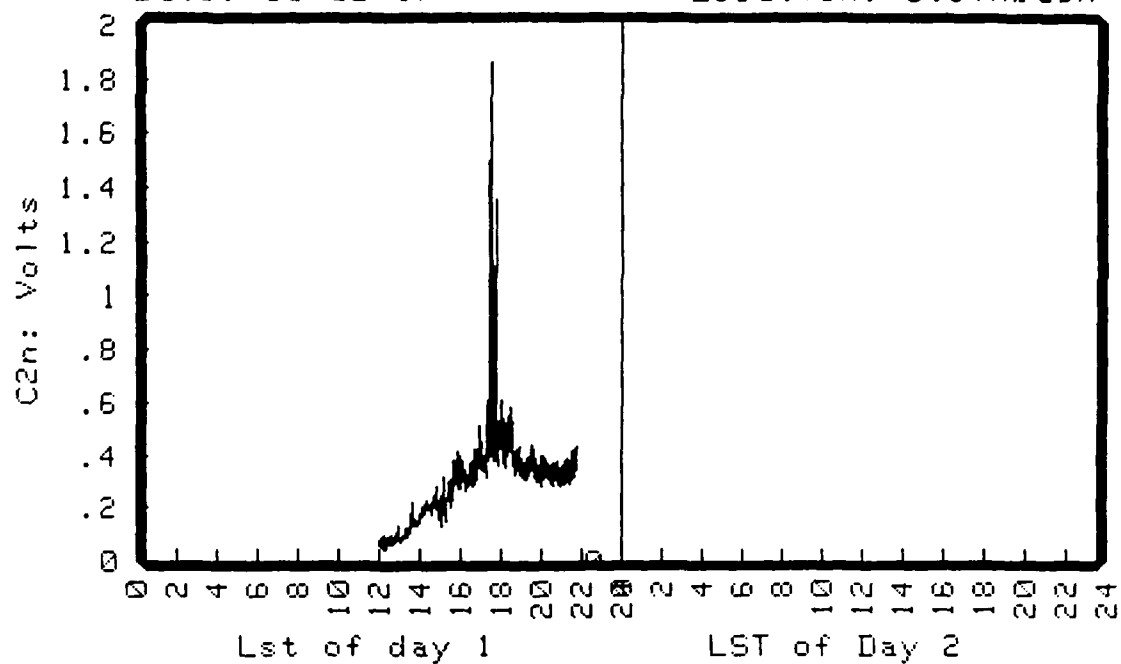
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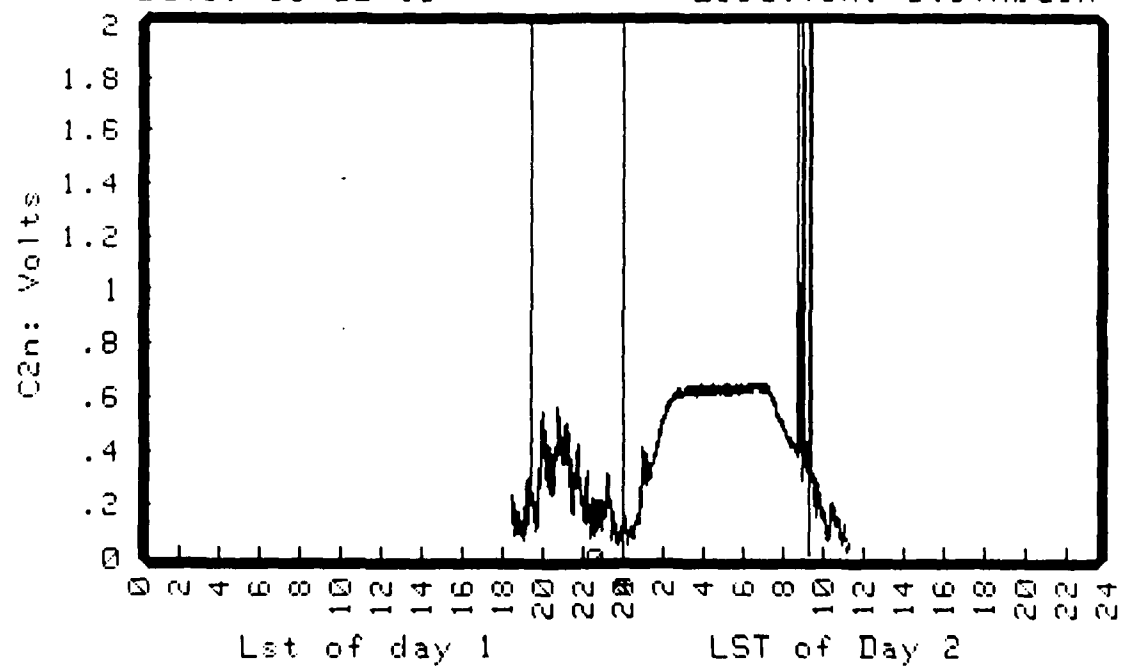
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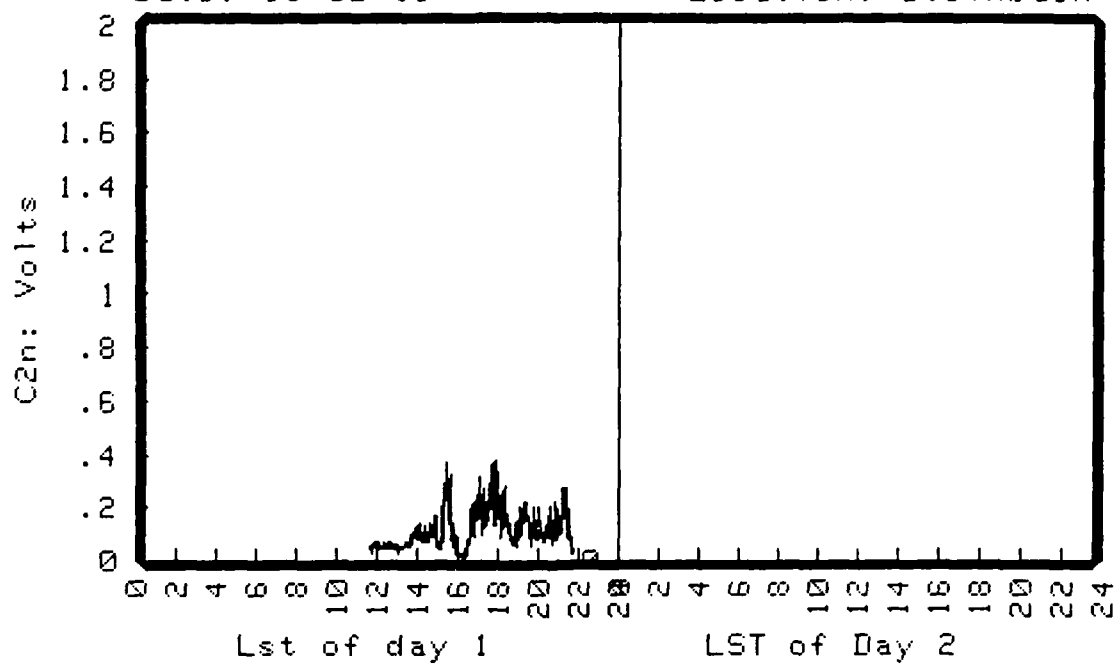
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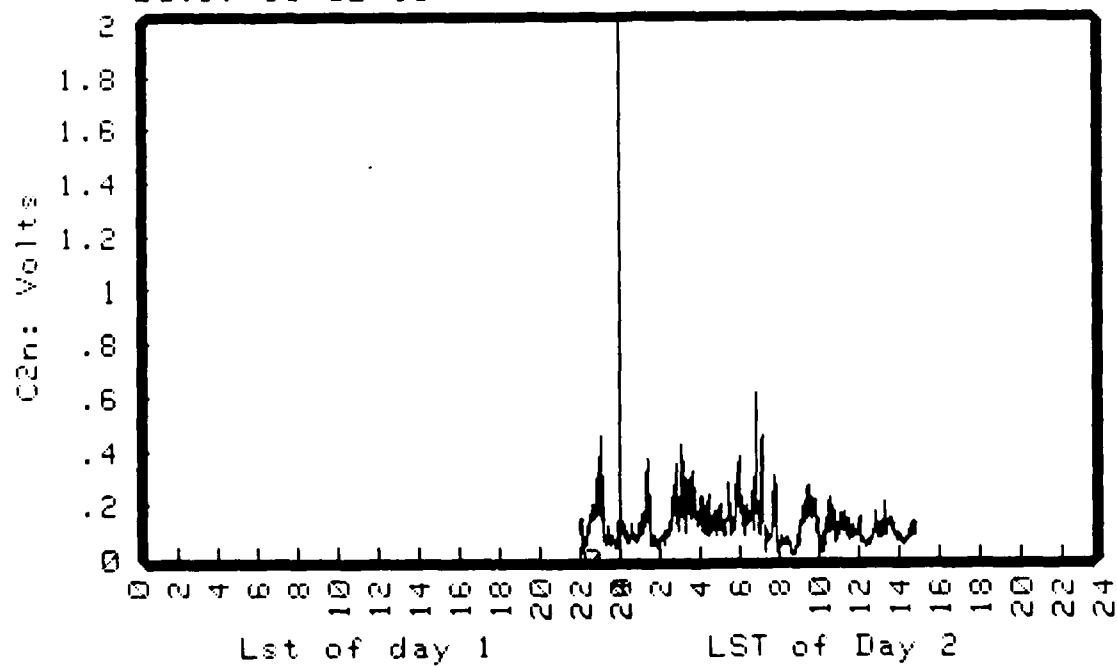
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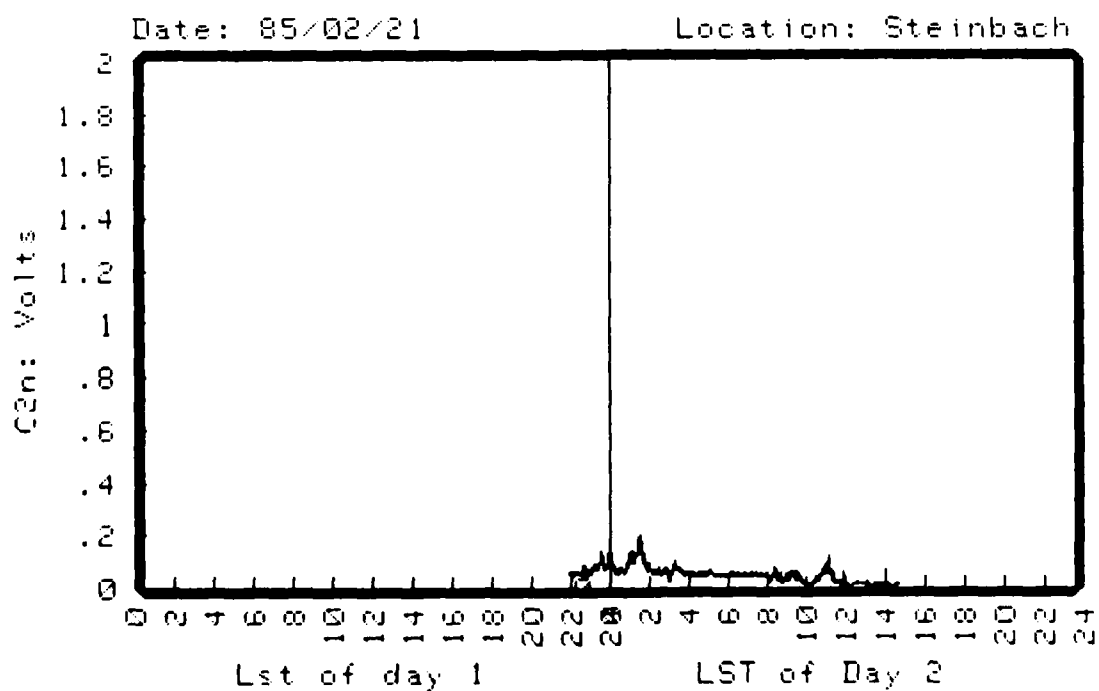
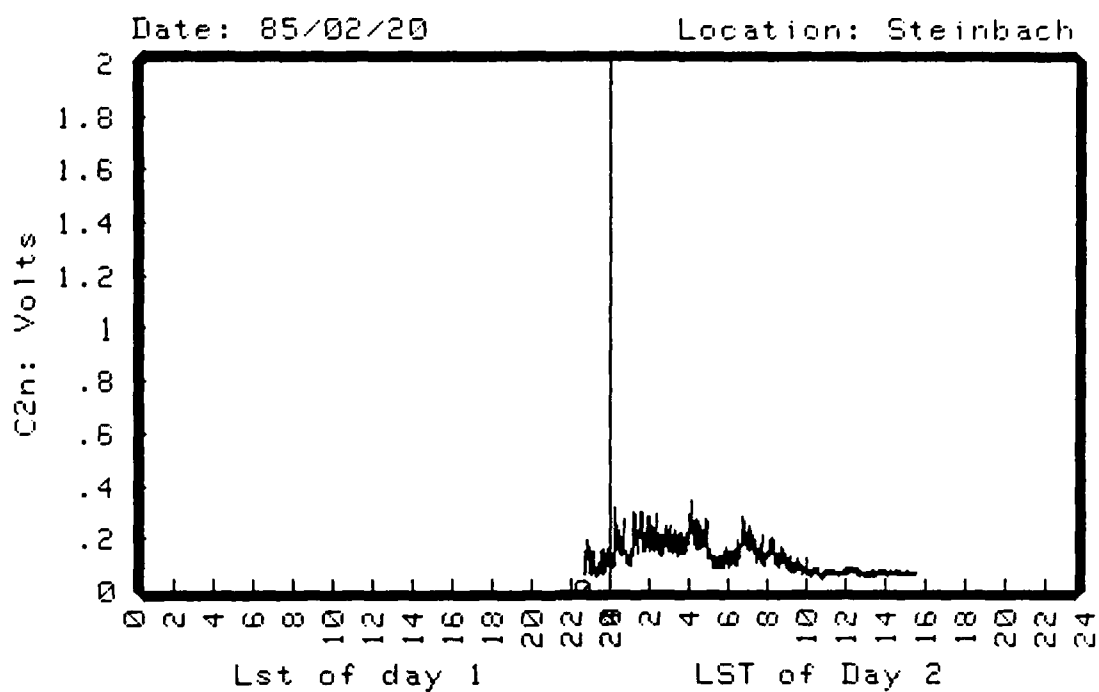
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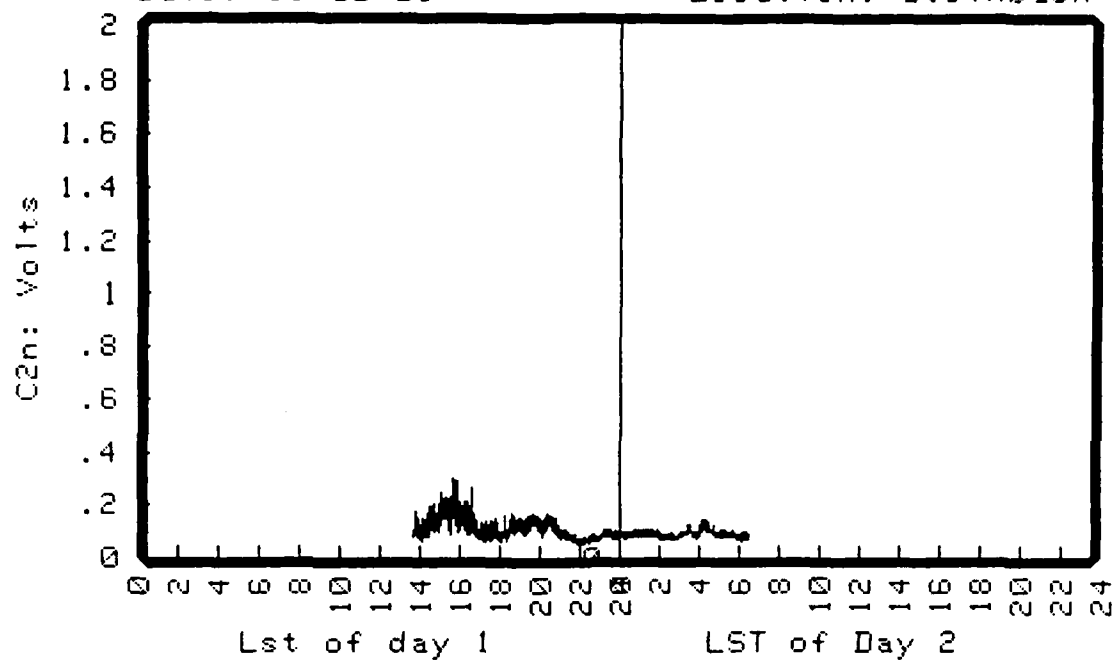
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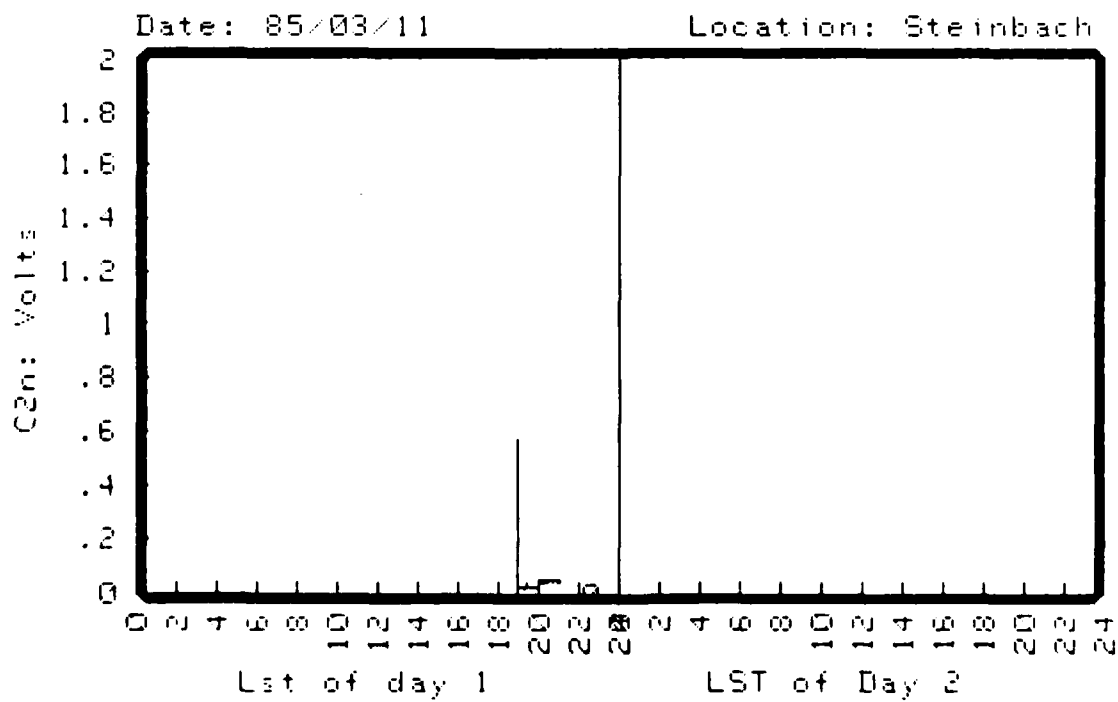
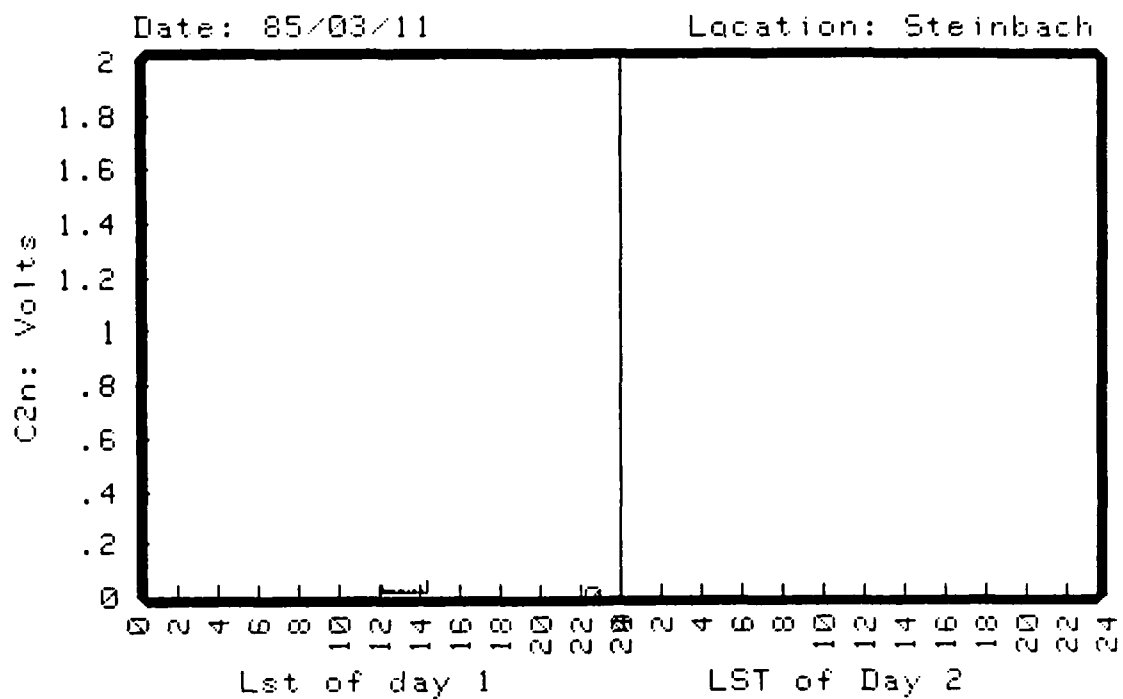


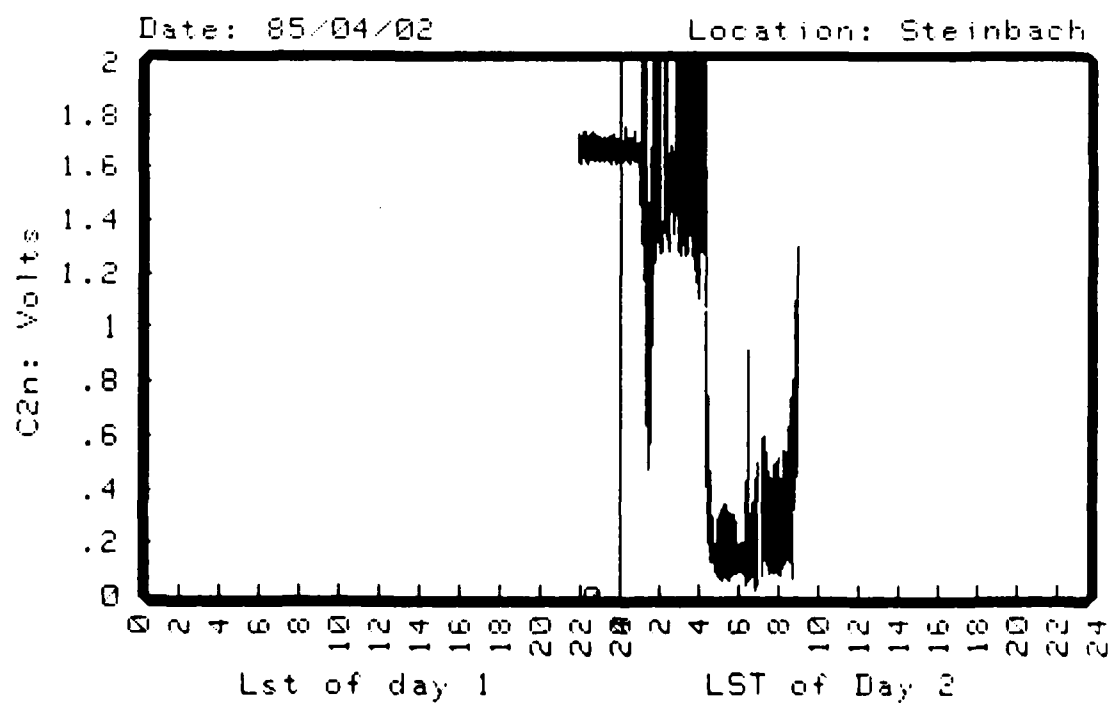
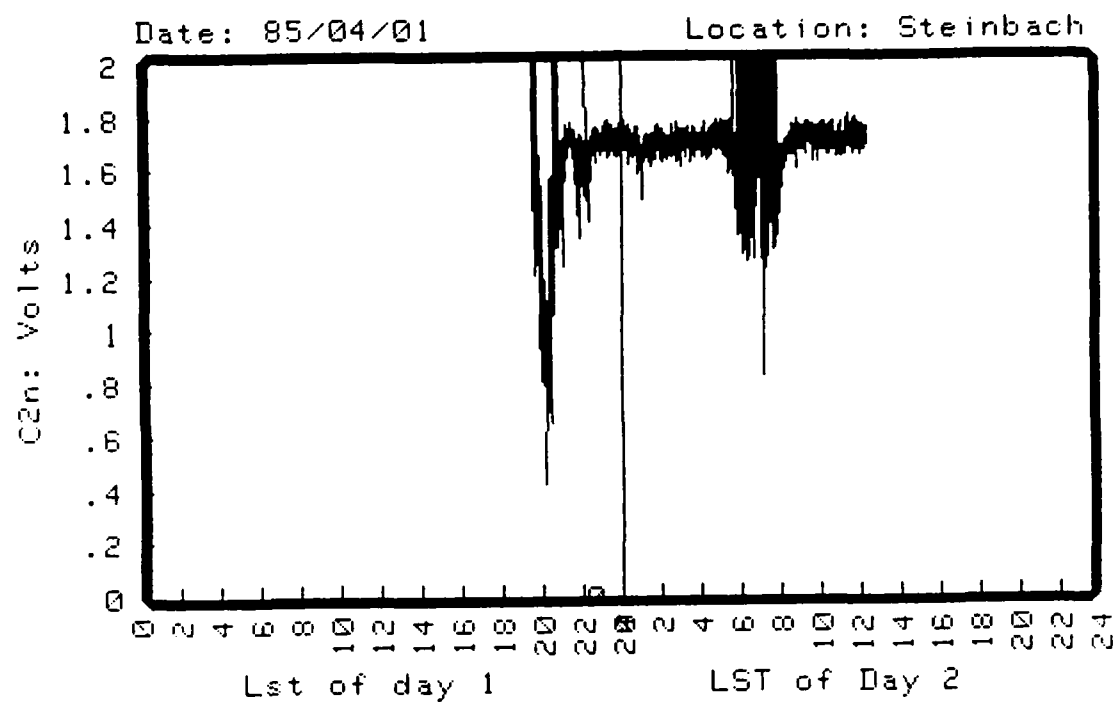


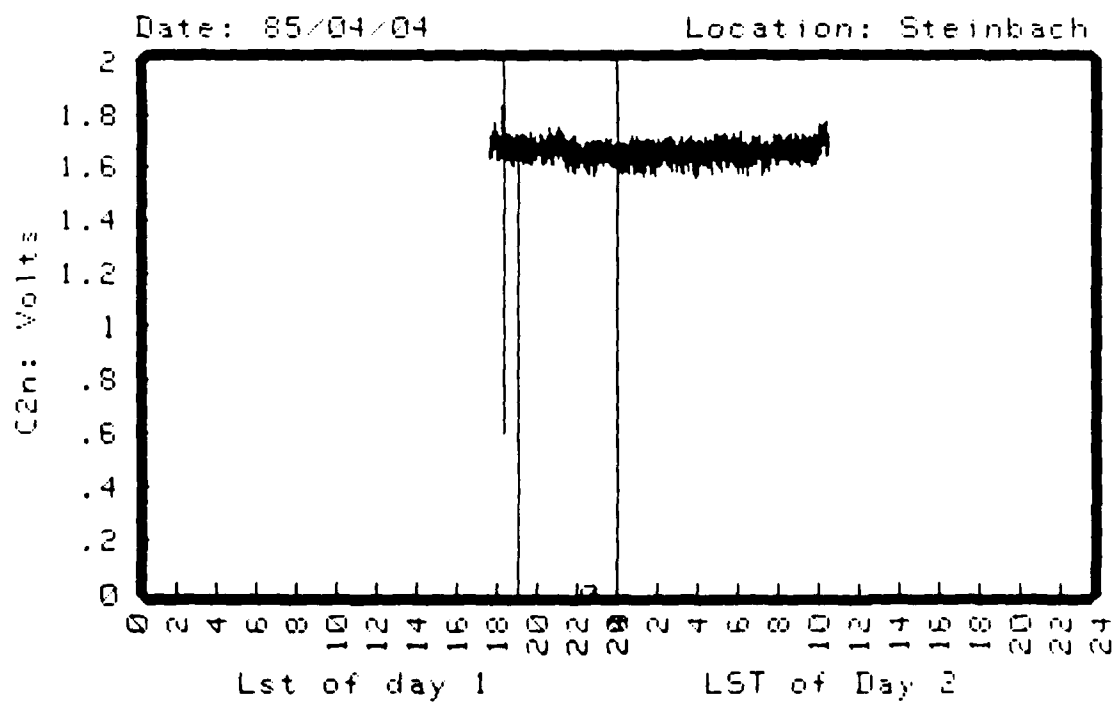
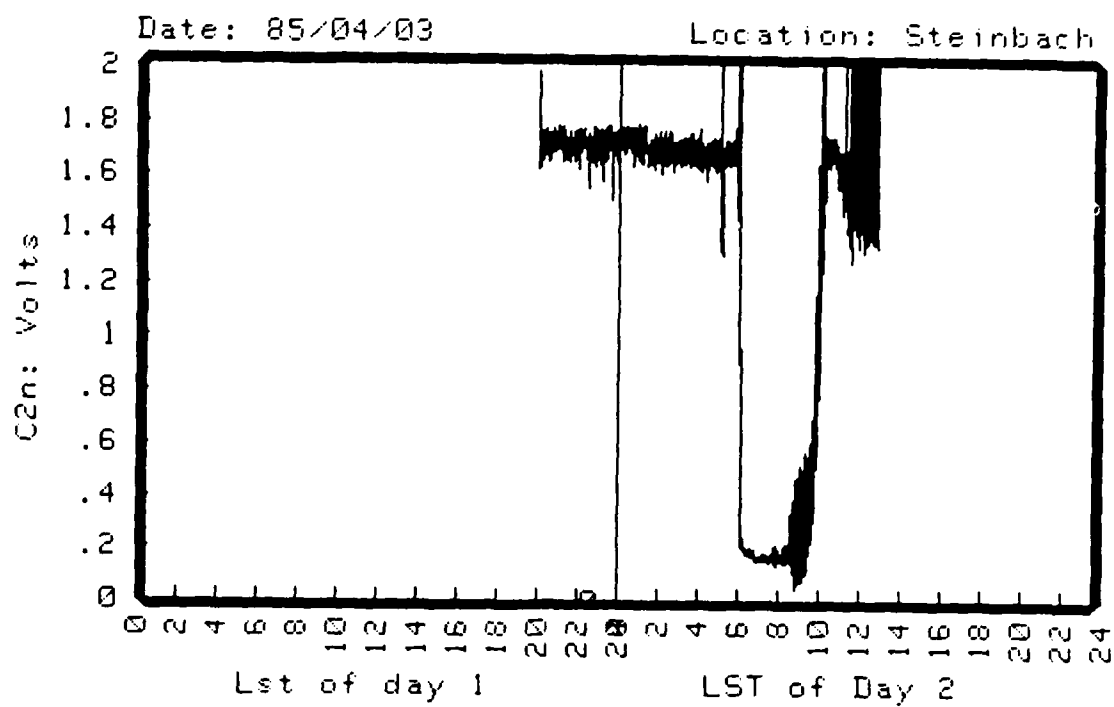
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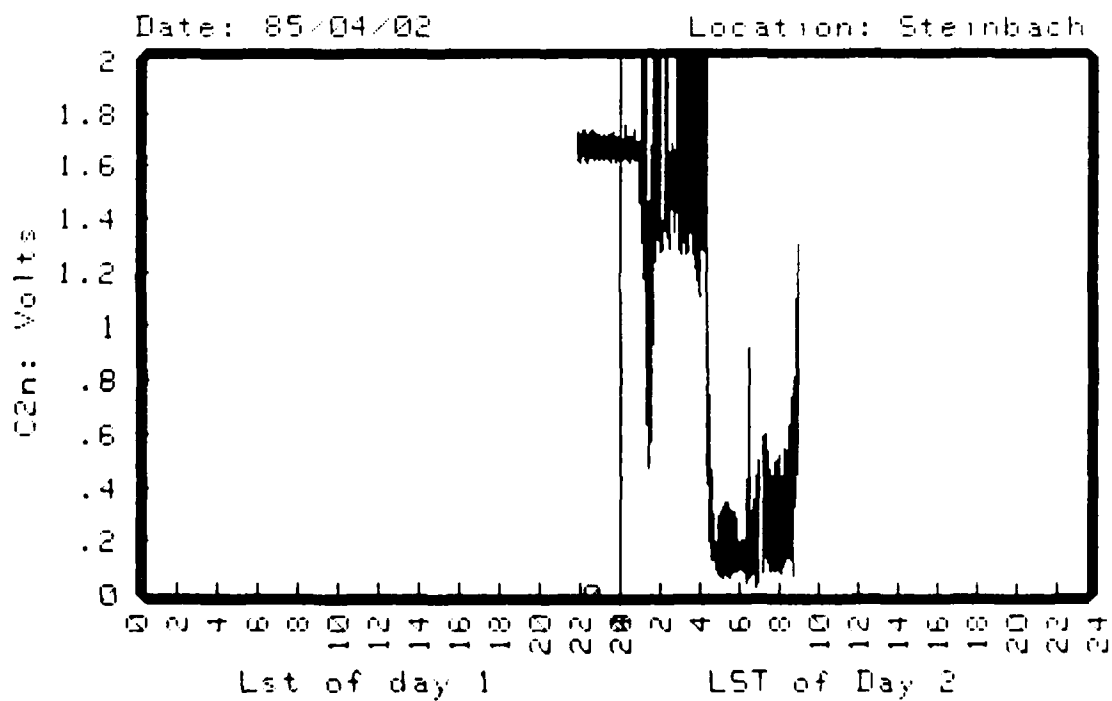
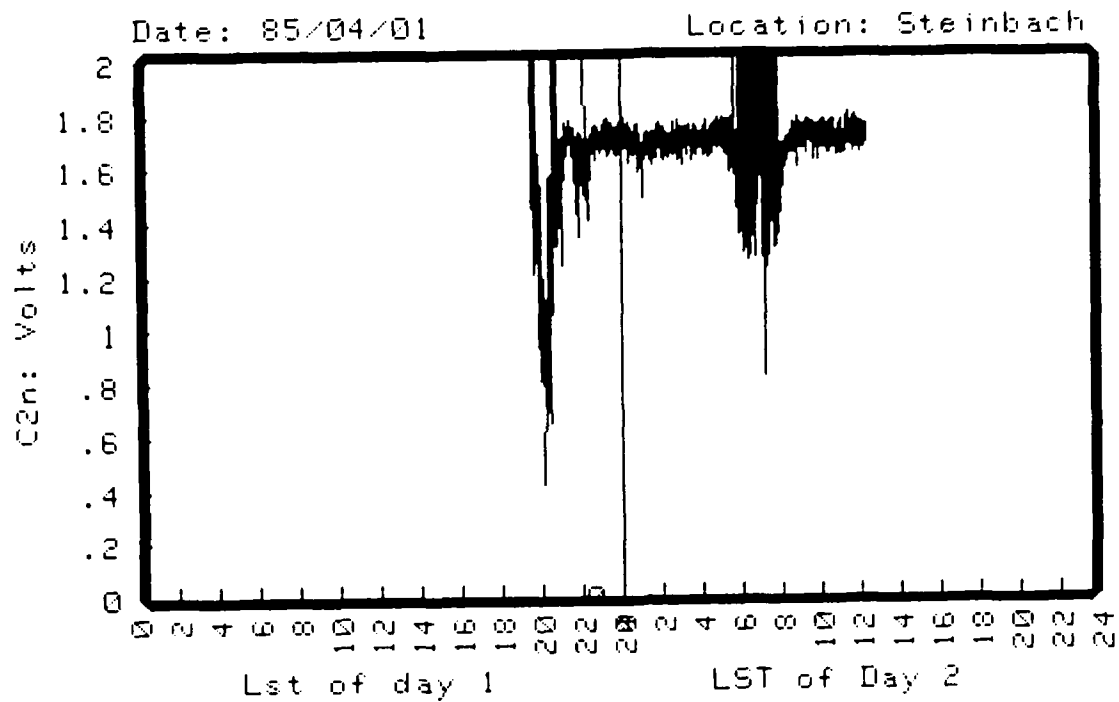
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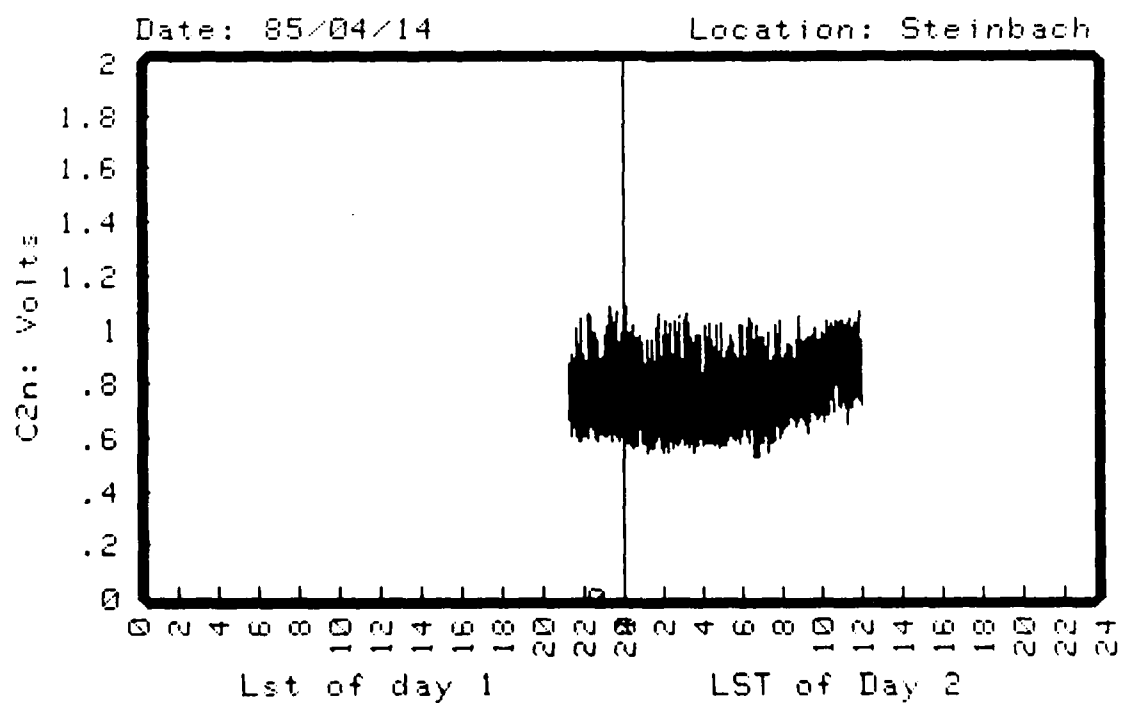
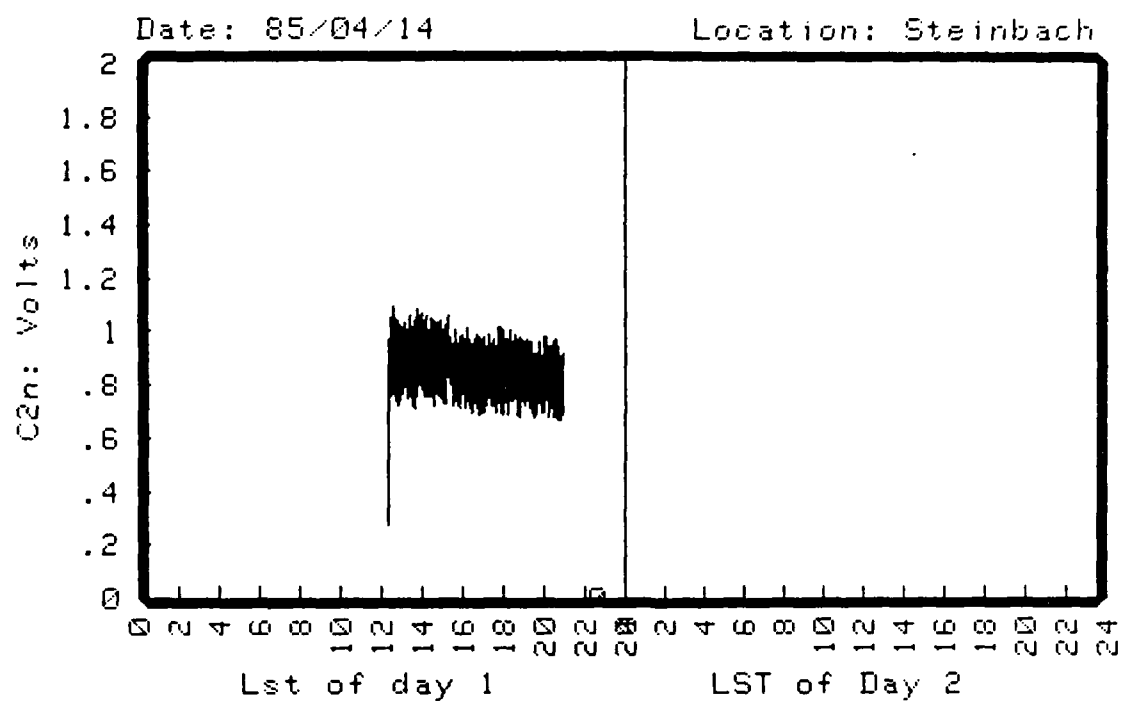






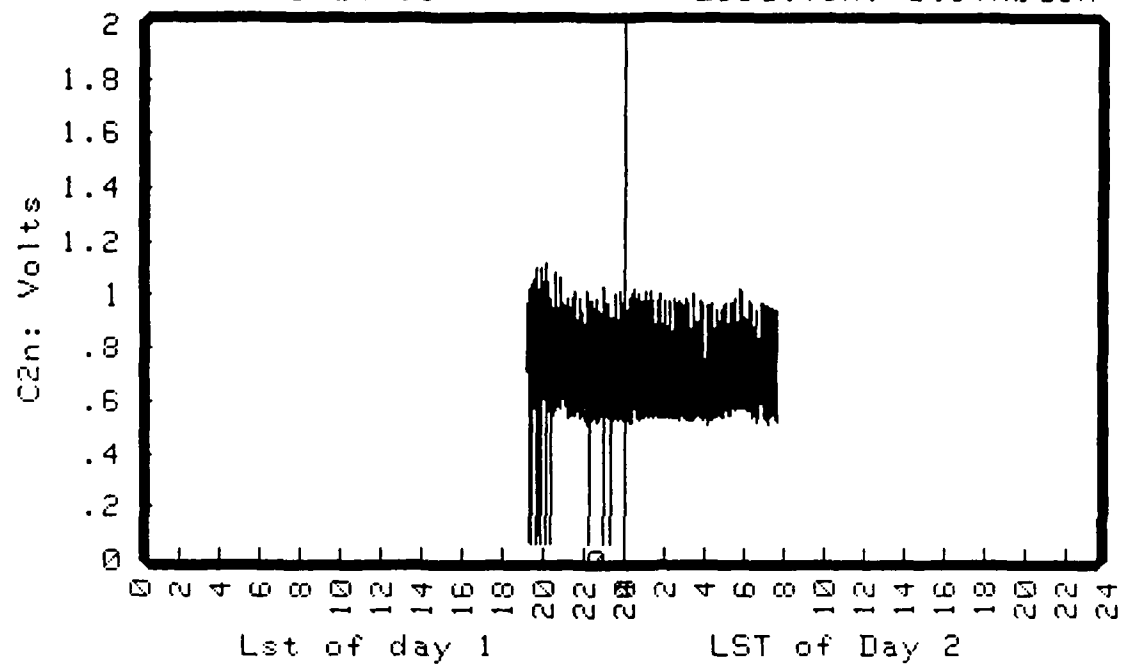






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